

ABSTRACT OF THE DISCLOSURE

Process for producing a semiconductor device includes forming an insulation layer on a semiconductor substrate surface and depositing a silicon layer on the 5 insulation layer, a reaction barrier layer such as a metal nitride layer on the first metallic layer and a second metallic layer on the barrier layer, processing a stacked structure of the silicon layer, first metallic layer, barrier layer and second metallic layer to form a gate electrode, 10 using the gate electrode as a mask and doping an impurity into the surface of the semiconductor substrate to form active regions of the device, heat reacting the first metallic layer with the silicon layer to form a metal silicide layer between the reaction barrier layer and the 15 silicon layer. The heat reaction process effected may be performed prior to or after the formation of the gate electrode. The metal silicide film may be a deposited film.